## Advertisement.

THere is now in the Press a Body of Algebra in English, recommended thereto by some of the Members of the R. Society, Composed by that known Mathematician of London, Mr. John Kersey. This Mathematical Art being that, by which chiefly Des-Cartes rendred himself so famous, as did Vieta before him, and since many of the English, French, and Dutch Nation; but no Elements of it in an entire Body being yet well digested in the English Language: this skilful Author hath taken the pains of digesting the choicest things of this Science, which lay dispersed in sundry Books, that are either very scarce and almost unprocurable, or very dear: A work, which, as it will doubtless prove very useful for all sorts of Ingenious Students of the Mathematicks in England, especially those that are not acquainted with Latin, French or Dutch (in which Languages the Books of those Sciences are mostly extant,) so it cannot but redound to the honour of this Nation, to have that done, whereby even the uncommon and abstruser parts of Learning and Knowledge are laid open and made intelligible to all such Capacities here, as are Lovers thereof.

Now as for the Encouragement of the Booksellers, a considerable number of persons have already subscribed, how many Books of this Work they will take off for themselves and their Friends; so was it thought fit, in this Tract to give further notice, that, though a good part of this Work be already printed, yet if any others shall be desirous to subscribe the Paper, printed by the Book-sellers for such Subscriptions, they shall be still received, addressing themselves to Thomas Passenger, or Benjamin Hurlock (living upon London-Bridge.) the Undertakers of this Work, who will assure all Subscribers, that they shall not pay by Three shillings so much for each Book, as they will be sold for in any shop. The Terms, on which they are to have the Books, are; 1½ pence a sheet, which is the cheapest price; and the Money not to be paid but upon the Delivery of the Books. The whole will take up at least 170 sheets.

To give the Curious a short view of the Contents thereof; he will find in the

First Book; The four Species of Algebraic operations both in Integers and Fractions: The Rule of Three in Algebraic Quantities: The Extraction of Roots out of Simple Quantities, as also out of a Quadratic Quantity consisting of three Terms: The compleating of an Algebraic Square consisting of three Terms, when one is wanting; together with a Collection of easie Questions to exercise the preceding Rules: Of an Equation, and the Reduction of Equations: How to convert Analogies into Equations, and Equations into Analogies: The Resolution of Simple Equations exercis'd in 28 Questions both in Numeral and Literal Algebra: The Resolution of such Compound Equations, wherein there are two different Powers of the Quantity sought, and the Lower of those Pow-

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ers is the Square root of the Higher ; together with 28 Questions, exercising such Compound Equations, resolved also in both kinds of Algebra : Of Arithmetical Progression, where Mr. Oughtred's 20 Questions upon that subject are explained.

The Second ; The Compleat Doctrine of the Extraction of all kinds of Roots, both in Numbers and Letters : Of Geometrical Proportion : Theorems about Continual Proportionals ; together with 20 Questions about the same, resolved by Literal Algebra: How to find out all the Aliquot parts or Just Divisors as well of Numbers as of Quantities exprest by Letters ; and to find out the smallest Number that shall have a given Multitude of Aliquot parts : The Arithmetic of Surd Numbers and Surd Quantities, exprest by Letters ; where also of the nature and construction of Binomials, and how to extract Roots out of them : An Explication of Sim. Steven's General Method of resolving all manner of Equations in Numbers : Extractions out of Vieta and Des-Cartes for the like : The manner of resolving Questions by putting a different Letter for every Quantity unknown, when many are sought : The manner of resolving Questions which have Innumerable Answers.

The Third Book is a Comment upon the hardest and choicest Questions, that are found in the second, third, fourth, fifth and sixth Books of Diophantus his Arithmetic ; with other Questions of the like nature, invented upon the same Grounds by Vieta, Bachet, Fermat, and others.

The Fourth shews the Use of Algebraical Art in the Geometrical Resolution and Composition of plane Problems, viz. such as may be effected by drawing only Right Lines, and describing the Circumferences of Circles: Where the manner of finding out Theorems and Problematical Constructions, with their Demonstrations by the steps of the Algebraic Resolution, is clearly exhibited.         Another Advertisement.

There is a Book preparing for the Press, intituled SYNTAGMA MUSICÆ ; in which the Eminent Author ( John Birchensha Esq; ) treats of Musick Philosophically, Mathematically, and Practically.    And because the Charge of bringing this Book to the Press will be very great, especially the several Cuts therein, with their Printing off, amounting by Computation to more than 500 l. besides other great Expenses for the Impression of the said Book, divers Persons, for the Encouragement of the said Author, have Advanced several Sums of Money ; who for every 20 s. so advanced are to receive one of the said Books fairly bound up; the Author engaging himself under his Hand and Seal to deliver to each of the Subscribers, and Advancers of so much money, one of the said Books at or before the 24th of March 1674. In which Excellent Work there will be,

1. A Discovery of the Reason and Causes of Musical Sounds and Harmony: A compleat Scale of Musick (never before perfected:) The Proportions of all Consonant and Dissonant Sounds, useful in Musick, demonstrated by intire Numbers (which the Author saith hath not been done by any:) The differing Opinions of Musical Authors reconciled : Of Sounds generated

rated, and diffused in their Medium : Of their difference to the Organ of Hearing ; together with their Reception there, and wonderful Effects : Of the Matter, Form, Quantity, and Quality of Musical Bodies or Sounds: That Musical Sounds are originally in the Radix or Unison ; and of their Fluxion out of it : Of the General and Special Kinds, Differences, Properties and Accidents of Sounds: Of the Truth and Falshood of Sounds.

2. Of the Principles of the Mathematical Part of Musick : Of the Whole, and Parts of the Scale of Musick : Of Sounds Equal and Unequal: Of the Numeration, Addition, Subtraction, Multiplication and Division of Musical Sounds : Of Musical Proportions, and their various Species's : What a Musical Body or Sound (Mathematically considered, viz. as Numerable,) is : Of Musical Medieties, &c. Arithmetical, Geometrical and Harmonical, together with 8 other Musical Medieties, of which no mention being made by any Musical Author: Of the Radix's of Musical Numbers; and that by their Powers all those Numbers, (and no other, ) which demonstrate the Proportions of Sounds, do arise: Of Musick Diatonic, Chromatic, and Enharmonic : Of the Principles of a Musical Magnitude, what and how manifold they are, and how they are conjoyned: Of the Contact, Section, Congruity, Adscription of a Musical Body : Of the Commensurability thereof : In what respect a Musical Sound may be said to be Infinit, and how to bound that Infinity.

3. Of a Musical System, Character, Voice, or Key: Of the Transposition of Keys : Of the Mutation of Musical Voices : Of Musical Pauses and Periods : Of the Denomination of Notes : Of the Moods, and Intervals : Of pure and florid Counter-point: Of Figurat Musick: Of Fuges, Canons, Double-discant, Syncope: Of the Mensuration of Sounds (called Time) and the Reason thereof : Of Choral Musick, both Roman and English · Of the Rhythmical part of Musick : Of the Solmisation, and Reason thereof.

4. The Abstruse and Difficult Terms of this Science are explained: The unnecessary and mystical subtleties, into which the Causes both of the Theory and Practic of Musick were reduced to the great obscuring of this Art, are omitted : The Principles of Philosophy, Mathematicks, Grammar, Rhetorick and Poetry are applied to Musical Sounds, and illustrated by them: The Generation of such Sounds is discours'd of, and particularly demonstrated.

5. An easie way is by this Author invented for making Airy Tunes of all sorts by a certain Rule (which most men think impossible to be done,) and the Composing of 2, 3, 4, 5, 6 & 7 Parts; which by the Learner may be performed in a few months: viz. in two months he may exquisitely and with all the Elegancies of Musick compose two parts; in three months, three Parts, and so forward ; as he affirms many persons of honor and worth have often experienced ; which otherwise cannot be done in so many years.

6. Whatsoever is grounded upon the several Hypotheses and Postulata in Book, is clearly demonstrated by Tables, Diagrams, Systems, &c.